



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,651	02/14/2002	Jeremy Alan Arnold	ROC920010318US1	9372

46296 7590 07/05/2005

MARTIN & ASSOCIATES, LLC
IBM INTELLECTUAL PROPERTY LAW DEPARTMENT
DEPARTMENT 917, BUILDING 006-1
3605 HIGHWAY 52 NORTH
ROCHESTER, MN 55901-7829

EXAMINER

WU, YICUN

ART UNIT	PAPER NUMBER
----------	--------------

2165

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,651

Applicant(s)

ARNOLD ET AL.

Examiner

Yicun Wu

Art Unit

2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 43-45 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-27 and 29-42 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2165

III. DETAILED ACTION

1. Claims 1-45 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10, 12-27 and 29-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Probert, Jr. et al. (U.S. Patent No. 6,745,176) in view of Khoyi et al. (U.S. Patent No. 5,226,161).

As to claims 1 and 12, Probert, Jr. et al. discloses an apparatus comprising:

at least one processor (fig. 1);

a memory coupled to the at least one processor (fig. 1);

and

Art Unit: 2165

a database optimizer residing in the memory and executed by the at least one processor (i.e. monitor access requests. Fig. 5),

the database optimizer using statistics (i.e. statistics. Fig. 5) regarding the type of applications accessing data in a database (i.e. format. Fig. 5),

the frequency with which the applications access the data (i.e. statistics. Fig. 5), and

data being accessed by the applications to make at least one change to the database schema (i.e. generate docfile allocation structures. Fig. 4) to optimize the performance of accessing data in the database (fig. 4).

Probert, Jr. et al. does not explicitly teach the location of the data.

Khoyi et al. teaches the location of the data (col. 11, lines 20-25 and col. 3, lines 10-40).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Probert, Jr. et al. with the location of the data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Probert, Jr. et al. by the teaching of Khoyi et al.

Art Unit: 2165

because providing the location of the data allows addition of new applications and data types if they do not fit within the applications and data types initially envisioned and defined as taught by Khoyi et al. (col. 2, lines 10-17).

As to claims 2 and 14, Probert, Jr. et al. as modified teaches an apparatus wherein

the database optimizer makes the change to the database schema according to a set of rules that specify a preferred data type for each type of application accessing data in the database (i.e. docfile and NSS format. Probert, Jr. et al. Fig. 4).

As to claims 3 and 15, Probert, Jr. et al. as modified teaches an apparatus wherein the change to the database schema comprises

changing the data type of at least one column in the database (i.e. docfile and NSS format. Probert, Jr. et al. Fig. 4).

As to claims 4 and 16, Probert, Jr. et al. as modified teaches an apparatus wherein the change to the database schema comprises

Art Unit: 2165

adding a new column of a second data type to the database that contains the same data in an existing column of a first data type in the database (i.e. docfile and NSS format. Probert, Jr. et al. Fig. 4).

As to claims 5 and 17, Probert, Jr. et al. as modified teaches an apparatus wherein the database optimizer further comprises

a data coherency mechanism for maintaining data coherency between the existing column and the new column (i.e. link. Khoyi et al. col. 3, lines 10-40).

As to claim 6, Probert, Jr. et al. as modified teaches an apparatus wherein

the database optimizer receives requests from at least one application to access data in the database (Probert, Jr. et al. Col. 3, lines 15-25), and

returns data from the database of a data type that is expected by the requesting application (i.e. format a program expects. Probert, Jr. et al. Col. 3, lines 15-25).

Art Unit: 2165

As to claim 7 and 19, Probert, Jr. et al. as modified teaches an apparatus wherein the database optimizer further comprises

a run time statistics gathering mechanism to gather the statistics (i.e. statistics. Fig. 5).

As to claims 8 and 18, Probert, Jr. et al. as modified teaches an apparatus wherein the database optimizer operates according to customization settings set by a human user (Probert, Jr. et al. Fig. 1, 5 and col. 6, lines 30-35).

As to claim 9, Probert, Jr. et al. as modified teaches an apparatus wherein the database optimizer further comprises

a data type conversion mechanism that converts data in a first data type retrieved from the database to a second data type that is preferred by an application requesting the data (i.e. docfile and NSS format. Probert, Jr. et al. Fig. 4).

5. As to claims 10, 20-27 and 29-42, the limitations of these claims have been noted in the rejection above. They are therefore rejected as set forth above.

Allowable subject Matter

6. Claims 11 and 43-45 are allowed over the prior art made of record.

7. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record (Probert, Jr. et al. (U.S. Patent No. 6,745,176) and Khoyi et al. (U.S. Patent No. 5,226,161) does not disclose, teach or suggest the claimed limitations of (in combination with all other features in the claims):

if the statistics indicate that a selected type of application has a number of accesses to a selected column of a first data type in the database that exceeds a first threshold level, the data optimizer determines whether the statistics indicate that the selected type of application has a number of accesses to the selected column that exceeds a second threshold

Art Unit: 2165

level, and if not, the data optimizer adds a new column of a second data type to the database that contains the same data in the selected column, the selected column and the new column being defined as reflective columns because they contain the same data in different data types;

wherein the data optimizer detects when one of the plurality of applications requests access to data in the selected column, determines the preferred data type for the requesting application, determines if the data in the selected column is of the preferred data type for the requesting application, and if the data in the selected column is of the preferred data type for the requesting application, returning the data in the selected column to the requesting application, as claimed in claim 11.

The prior art of record (Probert, Jr. et al. (U.S. Patent No. 6,745,176) and Khoyi et al. (U.S. Patent No. 5,226,161) does not disclose, teach or suggest the claimed limitations of (in combination with all other features in the claims):

if the statistics indicate that a selected type of application has a number of accesses to a selected column of a first data type in the database that exceeds a first threshold level, the data optimizer determines whether the statistics

Art Unit: 2165

indicate that the selected type of application has a number of accesses to the selected column that exceeds a second threshold level, and if not, the data optimizer adds a new column of a second data type to the database that contains the same data in the selected column, the selected column and the new column being defined as reflective columns because they contain the same data in different data types;

wherein the data optimizer detects when one of the plurality of applications requests access to data in the selected column, determines the preferred data type for the requesting application, determines if the data in the selected column is of the preferred data type for the requesting application, and if the data in the selected column is of the preferred data type for the requesting application, returning the data in the selected column to the requesting application; if the data in any column reflective of the selected column is of the preferred data type for the requesting application, the database optimizer returns the data from the reflective column to the requesting application, as claimed in claim 43.

The prior art of record (Probert, Jr. et al. (U.S. Patent No. 6,745,176) and Khoyi et al. (U.S. Patent No. 5,226,161) does

Art Unit: 2165

not disclose, teach or suggest the claimed limitations of (in combination with all other features in the claims):

determining the preferred data type for the requesting application; determining if the data in the selected column is of the preferred data type for the requesting application; if the data in the selected column is of the preferred data type for the requesting application, returning the data in the selected column to the requesting application; determining if the data in any column reflective of the selected column is of the preferred data type for the requesting application; if the data in a reflective column is of the preferred data type for the requesting application, returning the data from the reflective column to the requesting application; if the data in the selected column and in all reflective columns, if any, is not of the preferred data type for the requesting application, performing the steps of: converting the data to the preferred data type for the requesting application; and returning the converted data to the requesting application as claimed in claim 28.

Art Unit: 2165


Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yicun Wu whose telephone number is 703-305-4889. The examiner can normally be reached on 8:00 am to 4:30 pm, Monday -Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 703-305-3830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Yicun Wu
Patent Examiner
Technology Center 2100


CHARLES RONES
PRIMARY EXAMINER

June 20, 2005